

Patent Claims

1. A method for natural voice recognition based on a generative transformation/phrase structure grammar, characterized by the following steps:

- analyzing a spoken phrase for triphones contained therein;
- forming words, contained in the spoken phrase, from the recognized triphones with the aid of dictionaries; and
- syntactically reconstructing the spoken phrase from the recognized words using a grammar.

2. The method as claimed in claim 1, characterized in that the syntactic reconstruction of the spoken phrase comprises the following steps:

- allocating the recognized words to part-of-speech categories (verb, nouns etc.);
- allocating the part-of-speech categories to nominal phrases and verbal phrases;
- combining the nominal phrases and verbal phrases according to syntactic rules into objects, providing various sentence models, the recognized word sequences being compared with the predetermined sentence models, and, in the case of an agreement, the sentence being considered as recognized and triggering an action in a voice-controlled application.

3. The method as claimed in one of claims 1 or 2, characterized in that each sentence model has a number of

variables allocated to part-of-speech categories which are filled with the corresponding part-of-speech categories of the recognized words.

4. The method as claimed in one of claims 1 to 3, characterized in that the words to be recognized are held available subdivided into various part-of-speech categories in the dictionaries.

5. The method as claimed in one of claims 1 to 4, characterized in that the objects or parts thereof are linked to corresponding action parameters of a voice-controlled application.

Key to figures:

Fig. 1

1. 1. Triphone analysis
2. Call
3. Speech energy
- 4 Triphone string
5. Voice recognition system

Fig. 2

1. 2. Word recognition (dictionaries)
2. Triphone string
3. Comparison with dictionary
4. Recognized word

Fig. 3

1. 3. Syntactic reconstruction (grammar)
2. Recognized words
3. Syntactic reconstruction
4. Result

Fig. 4

1. Machine slots and values
2. List of subgrammars

Fig. 5

1. (Links objects for multitasking)

2. Version 01/02
3. Objects
(Combines nominal phrases and verbal phrases according to phrase-individual aspects into objects)
4. Yes/No
Yes expanded
No/others
5. Subject, tariffs, services, etc.
6. Auxiliary verbs,
Action verbs, etc.
7. Miscellaneous
8. Prepositions, particles etc.
9. Auxiliary, tutorial, etc.
10. Mobile number
Mobile number
Simple
Mobile number,
Natural ...
12. Dialing code,
Dialing code simple
Dialing code natural

Fig. 6

1. Noun
2. Verb
3. Adverb

4. Article
5. Adjective
6. Noun
7. Nominal phrase
8. Verbal phrase
9. SENTENCE

Fig. 7

1. (Prior Art)
2. Paradigms
3. Syntagmas